NEWS 3

CASCADE – ICT for Energy Efficient Airports

Newsletter No3

Welcome to the third newsletter of the CASCADE project, summarizing the news and project outcomes of the past 6 months.

CASCADE at conferences

The consortium has presented CASCADE at various international conferences: Institute Mihajlo Pupin (IMP) at two Serbian ICT events, the National University of Ireland in Galway (NUIG) at the 11th REHVA World Congress CLIMA 2013 in Prague.

Publications

IMP has published two conference papers about CASCADE in spring 2013; NUIG has released a paper on FDD and ISO 50001 in June. Fraunhofer ISE will publish two additional papers about qualitative modelling in autumn 2013 for the international conferences CISBAT and ICEBO.

Meetings

The CASCADE partners met several times this year at both airport pilots to organize the installation of additional sensors and meters in selected areas. All consortium members also joined at a Project Management Board meeting 20 to 21 March in the New Engineering Building of NUIG in Galway. A technical tour of this high energy efficient building was organized by our Irish colleagues.

Work progress

The CASCADE is in the demonstration phase since December 2012. The Consortium partners have further developed and specified the hard- and software to be installed at both airports pilots, Milano Malpensa (MXP) and Roma Fiumicino (FCO).

The ISO 50001 based software of ENERIT has been linked to the Fault Detection and Diagnosis (FDD) system of Fraunhofer ISE to enable an ongoing support and supervision of energy conservation measures. We have organized the installation of additional sensors and meters through invitation to tender to local installation firms accredited by the airports. The challenge was to develop a technical solution that can be integrated in the ICT infrastructure of airport pilots beyond the scope of the project.

We have released a first version of the online CASCADE tool in July 2013. It will be tested, validated and enhanced during the demonstration phase. The innovation character lies in the coupling of different systems like the ISO 50001 based Energy Management System with the FDD system, and with an ontology layer in which ontology models of both airport pilots have been instantiated. Through queries, the user can retrieve attributes of e.g. a faulty energy system defined as a class and also find relationship between this system and adjoining systems. Thus the extraction of information to support energy conservation actions is easier and faster as with documentation management using classical databases, file folders and hardcopies.

Installations at Fiumicino and Malpensa airports

The installations at both airports will start in Summer 2013 with the objective to be finalized by the end of September 2013. Large chiller plants and cooling towers as well as large air handling units have been selected for the implementation of the CASCADE solution. The architecture of the whole ICT solution has been designed in close collaboration with the different actors of the FCO and MXP airports. Thus, the CASCADE team has worked together with ICT specialists for the integration of the different servers and advanced data logging systems, with energy and maintenance teams for the thorough design of the measurement equipment to be installed on targeted systems.